PHESS Starts in Indiana

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The Indiana State Department of Health (ISDH) has made recent progress in the quest to receive patient data transmitted electronically (in the form of "chief complaints") directly from hospital emergency departments to the ISDH. As projected, these chief complaints will serve as indicators to detect a public health emergency or bioterrorist event before such an event is confirmed by diagnosis or overt activity. This hospital emergency department patient information comprises a major part of the state syndromic surveillance system, called PHESS (Public Health Emergency Surveillance System).

Emergency departments (ED) from five Indianapolis hospital systems (14 individual hospitals) now transmit chief complaints electronically to the ISDH daily. These hospitals represent the first step in a pilot program to test electronic transmission of patient data for the new syndromic surveillance system.

The pilot program will include an additional 19 hospitals (approximately two in each of the 10 Public Health Preparedness Districts), which will each submit electronic patient data to the ISDH by the end of January 2005. When these additional hospitals are brought into the system, patient chief complaints will be transmitted to the ISDH from a total of 33 pilot hospitals. Projections include that the chief complaint information will be added to other currently received information (such as over-the-counter drug sales and Indiana Poison Center reports) in PHESS for a more integrated monitoring and alert system.

PHESS will employ aspects of design and analysis gleaned from major universities (and other centers) across the country, such as Harvard, Pittsburgh, and Carnegie-Mellon. For example, PHESS will use a chief complaint coder, or CoCo, developed by the University of Pittsburgh. CoCo codes symptoms into syndrome categories, including respiratory, gastrointestinal, neurological, and others. This analysis program identifies probabilities (based on historical information) that predict that a particular chief complaint entered by a nurse or physician into the ED record will fit into a specific syndrome category. Syndrome categories will then be analyzed by location and time of occurrence to determine if "clusters" above normal thresholds are occurring. An alert and response program will be developed.

The ISDH will use (and potentially modify) programs in the public domain developed by major universities and centers across the country. Examples include AEGIS (Automated Epidemiologic Geotemporal Integrated Surveillance), and SATSCAN (Spatial and Space Time-Series Spacial Scan Statistic) developed at Harvard; and WSARE (What's Strange About Recent Events), developed at Carnegie Mellon University. ISDH staff plan to use and modify a variety of these programs to develop a system that reflects the "best thinking" in the country for Indiana.

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